Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application.

1. (Previously Presented) An electrolyte for the electrolysis of alumina, the electrolyte comprising a mixture of aluminum fluoride , potassium fluoride , oxygen-containing ions, and NaF, wherein the NaF comprises no more than 2 weight percent of the electrolyte.

2. (Previously Presented) The electrolyte recited in claim 1 wherein the potassium fluoride to aluminum fluoride molar ratio ranges from about 1.0 to 1.5.

3. (Currently Amended) The electrolyte recited in claim 1, the electrolyte further comprising from about 4 to 6 wt. % of dissolved aluminum oxide ~~(alumina/Al_2O_3)~~.

4. (Canceled)

5. (Canceled)

6. (Currently Amended) The electrolyte as recited in claim 3 wherein the electrolyte is a liquid ~~between 600 and 1000 °C.~~

Claims 7-20 (Canceled)

21. (Currently Amended) A liquid phase electrolyte ~~at between 600 and 1000 °C~~, the electrolyte comprising potassium fluoride, aluminum fluoride, and less than two weight percent of NaF.

22. (Currently Amended) The electrolyte as recited in claim 21 further comprising from about 4 to 6 wt. % of dissolved aluminum oxide.

23. (Currently Amended) The electrolyte as recited in claim 22 further comprising $Al_2OF_6^{-2}$ and $Al_2O_2F_4^{-2}$.

24. (Currently Amended) ~~An electrolyte consisting of~~ A liquid electrolyte comprising potassium fluoride and aluminum fluoride in a 1.3 molar weight ratio, between about 4 to 6 wt% dissolved aluminum oxide, and less than two weight percent NaF.

25. (New) A liquid electrolyte produced by the process of

a.) supplying a mixture of potassium fluoride, aluminum fluoride, 4-6 weight percent alumina and no more than 2 weight percent NaF; and

b.) heating the mixture to between 660 and 1000 °C.

26. (New) The liquid electrolyte as recited in claim 25 wherein the molar ratio of potassium fluoride to aluminum fluoride ranges from about 1.0 to 1.5.

27. (New) The liquid electrolyte as recited in claim 25 wherein the alumina is dissolved.